

**AMENDMENTS TO THE CLAIMS**

*Please amend the claims as follows:*

Claim 1-12 (Cancelled)

Claim 13. (Previously Presented) A process of a conversion of heat energy into mechanical energy by means of periodical changing volume, pressure and temperature of a work medium, in separate chambers of a heat engine, comprising the steps of:

sucking the work medium into a first stage chamber by enlarging the volume of the first stage chamber by motion of a piston of the first stage chamber;

transferring the work medium from the first stage chamber into a second stage chamber, concurrently with decreasing the volume of the first stage chamber by motion of the piston of the first stage chamber and increasing the volume of the second stage chamber by motion of a piston of the second stage chamber;

transferring the work medium from the second stage chamber through a third stage chamber of a constant volume to a fourth stage chamber concurrently with decreasing the volume of the second stage chamber by motion of the piston of the second stage chamber and increasing the volume of the fourth stage chamber by motion of a piston of the fourth stage chamber; while supplying heat to the work medium passing through the third stage chamber;

transferring the work medium from the fourth stage chamber to a fifth stage chamber, concurrently with decreasing the volume of the fourth stage chamber by motion of the piston of the fourth stage chamber and increasing the volume of the fifth stage chamber by motion of a piston of the fifth stage chamber; and

discharging the work medium from the fifth stage chamber by decreasing the volume of the fifth stage chamber by motion of the piston of the fifth stage chamber;

wherein mechanical energy is consumed when decreasing the volume of the first stage chamber and decreasing the volume of the second stage chamber, and mechanical energy is carried away when increasing the volume of the fourth stage chamber and increasing the volume of the fifth stage chamber.

Claim 14. (Previously Presented) A process according to claim 13, further comprising the step of:

cooling the work medium during transfer from the first stage chamber into the second stage chamber.

Claim 15. (Previously Presented) A process according to claim 13, further comprising the step of:

transferring the work medium from the fifth stage chamber to the first stage chamber while cooling the work medium and concurrently decreasing the volume of the fifth stage chamber and increasing the volume of the first stage chamber.

Claim 16. (Cancelled)

Claim 17. (Previously Presented) A process according to claim 13, further comprising  
the step of:

transferring the work medium from the fifth stage chamber by decreasing the volume of  
the fifth stage chamber by motion of the piston of the fifth stage chamber to a heat exchanger for  
transmission of the heat energy to the work medium passing through the third stage chamber.

Claim 18. (**Currently Amended**) An apparatus for conversion of heat energy into  
mechanical energy by means of periodical changing volume, pressure and temperature of a work  
medium in separate chambers of ~~an internal combustion~~ a heat engine with rolling moving  
pistons, comprising:

a first stage chamber having a variable volume and a second stage chamber having a  
variable volume, the largest volume of the first stage chamber being larger than the largest  
volume of the second stage chamber,

a third stage chamber having a constant volume, and provided with a means for heat  
supply for the work medium passing through the third stage chamber, and

a fourth stage chamber having a variable volume and a fifth stage chamber having a  
variable volume, the largest volume of the fifth stage chamber being larger than the largest  
volume of the fourth stage chamber, and the largest volume of the fifth stage chamber being  
larger or equal to the largest volume of the first stage chamber.

Claim 19. (Previously Presented) An apparatus according to claim 18, wherein the fifth  
stage chamber is provided with an intake valve.

Claim 20. (Previously Presented) An apparatus according to claim 18, wherein a work medium inter stage cooler is placed between the first stage chamber and the second stage chamber.

Claim 21. (Currently Amended) An apparatus according to claim 18, wherein the third stage chamber is a combustion chamber with interior combustion or a heat exchanger with external heating.